

seqlist.txt
SEQUENCE LISTING

<110> ERTL, Peter F.

<120> Vaccine

<130> PG5023

<140> Not Yet Assigned

<141> 2005-05-04

<150> PCT/EP 03/12402

<151> 2003-03-11

<150> GB 0225788.9

<151> 2002-11-05

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65					70				75					80	
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				85					90					95	
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	115						120					125			
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Phe	Tyr	Asn	Leu	Asp	Val	Val	Pro	Ile	Asp	Asp	Asp	Asn	Ala	Thr	Thr
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Ala	His	Cys	Asn	Leu	Ser	Arg	Ala	Gln	Trp	Asn	Asn	Thr	Leu	Lys	Gln
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385					390					395					400
Thr	Trp	Asn	Gly	Thr	Glu	Gly	Asn	Asn	Thr	Glu	Gly	Asn	Ser	Thr	Ile
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Ala	Ala	Thr	Asn	Ala	Ala	Cys	Ala	Trp	Leu	Glu	Ala	Gln	Glu	Glu	Glu
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65					70					75				80	
Tyr	Lys	Ala	Ala	Val	Asp	Leu	Ser	His	Phe	Leu	Lys	Glu	Lys	Gly	Gly
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Leu	Glu	Gly	Leu	Ile	His	Ser	Gln	Arg	Arg	Gln	Asp	Ile	Leu	Asp	Leu
			100					105					110		
Trp	Ile	Tyr	His	Thr	Gln	Gly	Tyr	Phe	Pro	Asp	Trp	Gln	Asn	Tyr	Thr
	115						120					125			
Pro	Gly	Pro	Gly	Val	Arg	Tyr	Pro	Leu	Thr	Phe	Gly	Trp	Cys	Tyr	Lys
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145					150					155					160
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			165						170					175	
Glu	Arg	Glu	Val	Leu	Glu	Trp	Arg	Phe	Asp	Ser	Arg	Leu	Ala	Phe	His
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His	Val	Ala	Arg	Glu	Leu	His	Pro	Glu	Tyr	Phe	Lys	Asn	Cys	Thr	Ser
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Glu	Pro	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser	Gln
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225					230					235					240
Cys	Gln	Val	Cys	Phe	Ile	Thr	Ala	Ala	Leu	Gly	Ile	Ser	Tyr	Gly	Arg
			245						250					255	
Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Ser	Gln	Thr	His
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Gln	Val	Ser	Leu	Ser	Lys	Gln	Pro	Thr	Ser	Gln	Ser	Lys	Gly	Glu	Pro
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35     40     45
Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr Thr
50     55     60
Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr Lys
65     70     75     80
Leu Val Pro Val Glu Pro Asp Lys Val Glu Ala Asn Lys Gly Glu
85     90     95
Asn Thr Ser Leu Leu His Pro Val Ser Leu His Gly Met Asp Asp Pro
100    105    110
Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe His
115    120    125
His Val Ala Arg Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr Ser
130    135    140
Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gln
145    150    155    160
Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe His
165    170    175    180
Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly Arg
185    190
Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His
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<223> HIV-1 ds-gp120c

<400> 56

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Met Ala Glu Gln Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp
1      5      10      15
Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
20      25      30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35      40      45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
50      55      60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65      70      75      80
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
85      90      95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100      105      110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115      120      125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130      135      140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145      150      155      160
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165      170      175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180      185      190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195      200      205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210      215      220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225      230      235      240
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
245      250      255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
260      265      270      275
Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
280      285      290
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
295      300
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305      310      315      320

```

seqlist.txt

```

Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
      325      330      335
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
      340      345      350
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
      355      360      365
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
      370      375      380
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met
      385      390      395
Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
      405      410      415
Ile Arg Cys Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly
      420      425      430
Gly Thr Glu Gly Asn Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro
      435      440      445
Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr
      450      455      460
Lys Val Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
      465      470      475      480
Arg Arg Val Val Gln Arg
      485

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<210> 57
 <211> 2340
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c'

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<400> 57
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gcgacgcatg cttgcgtgcc tacggacccc aacccccagg aggtggtgct gggaaacgtg 180
accgagtact tcaacatgtg gaagaataac atggtggatc agatgcacga ggacatcatc 240
tctctgtggg accagtcctt gaagccctgc gtgaagctga cgctctctcg cgtgacactg 300
gactgtgacg acgtcaacac caccaacagc actaccacca ccagcaacgg ctggaccgga 360
gagattcgga agggcgagat caagaactgc tccttcaata tcacgacctc gatcagagac 420
aaggtgcaga aggaatacgc gctgttttat aatctcgatg tggccccat cgacgacgac 480
aatgccacca ccaagaacaa gacgacgcgt aatttcagac tcattcactg caacagcagc 540
gtcatgacgc aggcctgccc caaggtgtcc ttcgaaccaa tcccgatcca ttactgtgcc 600
cctgccggat tcgcgatcct caagtgtaac aacaagacct tcgacgggaa gggcctgtgc 660
accaacgtca gcacggtgca gtgcacccat ggcattccgc ccgtcgtgag caccagctg 720
ctgctgaacg ggtccctggc tgaggaggag gtggtgatcc ggtcggacaa cttcatggac 780
aacaccaaga caatcatcgt ccagctgaac gagtctgtgg cgattaactg taccggcct 840
aacaacaaca cccgtaaggg catccacatc gggcctggac gggccttcta tgccgcccgc 900
aagatcatcg gcgacatccg gcaggcccat tgcaacctct cccgcgcca gtggaataac 960
accctgaagc agatcgtgat caagctgaga gagcactttg gaaacaagac catcaagttc 1020
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ttcttctact gcgatacgac acagctcttc aactccacct ggaacggcac cgagggcaac 1140
aacacagagg gaaactccac tatcaccctc ccttgccgca tcaagcagat catcaacatg 1200
tggcaggagg tgggaaaggc catgtatgcc ccccccacg ggggccagat ccgctgtcc 1260
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aacgagacgg agatcttcag gcccggcggc ggcgacatga gggataactg gcggagcgag 1380
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tgtgcctggc tagaagcaca agaggaggag gaggtgggtt ttccagtcac acctcaggta 1680
cctttaagac caatgactta caaggcagct gtagatctta gccacttttt aaaagaaaag 1740
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gaccctgaga gagaagtgtt agagtggagg tttgacagcc gcctagcatt tcatcacgtg 2040
gcccagagag tgcattccga gtacttcaag aactgcacta gtgagccagt agatcctaga 2100

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seqlist.txt

ctagagccct ggaagcatcc aggaagtcag cctaaaactg cttgtaccaa ttgctattgt 2160
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 ggcaggaaga agcggagaca gcgacgaaga cctcctcaag gcagtcagac tcatcaagtt 2280
 tctctatcaa agcaaccac ctcccaatcc aaaggggagc cgacaggccc gaaggaataa 2340

<210> 58
 <211> 779
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c'

<400> 58
 Met Ala Glu Gln Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp
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 Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
 20 25 30
 Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
 35 40 45
 Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
 50 55 60
 Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
 65 70 75 80
 Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
 85 90 95
 Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
 100 105 110
 Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
 115 120 125
 Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
 130 135 140
 Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
 145 150 155 160
 Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
 165 170 175
 Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
 180 185 190
 Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
 195 200 205
 Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
 210 215 220
 Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
 225 230 235 240
 Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
 245 250 255
 Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
 260 265 270
 Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
 275 280 285
 His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
 290 295 300
 Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
 305 310 315 320
 Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
 325 330 335
 Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
 340 345 350
 His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
 355 360 365
 Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
 370 375 380
 Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met
 385 390 395 400
 Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
 405 410 415
 Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly

seqlist.txt

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Gly	Thr	Glu	Gly	Asn	Gly	Thr	Glu	Asn	Glu	Thr	Glu	Ile	Phe	Arg	Pro					
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Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	Tyr					
		450					455					460								
Lys	Val	Val	Lys	Val	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	Ala	Lys					
465					470					475					480					
Arg	Arg	Val	Val	Gln	Arg	Met	Gly	Gly	Lys	Trp	Ser	Lys	Ser	Ser	Val					
				485					490					495						
Val	Gly	Trp	Pro	Thr	Val	Arg	Glu	Arg	Met	Arg	Arg	Ala	Glu	Pro	Ala					
				500					505					510						
Ala	Asp	Gly	Val	Gly	Ala	Ala	Ser	Arg	Asp	Leu	Glu	Lys	His	Gly	Ala					
				515					520					525						
Ile	Thr	Ser	Ser	Asn	Thr	Ala	Ala	Thr	Asn	Ala	Ala	Cys	Ala	Trp	Leu					
						535					540									
Glu	Ala	Gln	Glu	Glu	Glu	Glu	Val	Gly	Phe	Pro	Val	Thr	Pro	Gln	Val					
545					550					555					560					
Pro	Leu	Arg	Pro	Met	Thr	Tyr	Lys	Ala	Ala	Val	Asp	Leu	Ser	His	Phe					
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Leu	Lys	Glu	Lys	Gly	Gly	Leu	Glu	Gly	Leu	Ile	His	Ser	Gln	Arg	Arg					
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Gln	Asp	Ile	Leu	Asp	Leu	Trp	Ile	Tyr	His	Thr	Gln	Gly	Tyr	Phe	Pro					
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Asp	Trp	Gln	Asn	Tyr	Thr	Pro	Gly	Pro	Gly	Val	Arg	Tyr	Pro	Leu	Thr					
						615					620									
Phe	Gly	Trp	Cys	Tyr	Lys	Leu	Val	Pro	Val	Glu	Pro	Asp	Lys	Val	Glu					
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Glu	Ala	Asn	Lys	Gly	Glu	Asn	Thr	Ser	Leu	Leu	His	Pro	Val	Ser	Leu					
				645					650					655						
His	Gly	Met	Asp	Asp	Pro	Glu	Arg	Glu	Val	Leu	Glu	Trp	Arg	Phe	Asp					
				660					665					670						
Ser	Arg	Leu	Ala	Phe	His	His	Val	Ala	Arg	Glu	Leu	His	Pro	Glu	Tyr					
				675					680					685						
Phe	Lys	Asn	Cys	Thr	Ser	Glu	Pro	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp					
				690					695					700						
Lys	His	Pro	Gly	Ser	Gln	Pro	Lys	Thr	Ala	Cys	Thr	Asn	Cys	Tyr	Cys					
705					710					715					720					
Lys	Lys	Cys	Cys	Phe	His	Cys	Gln	Val	Cys	Phe	Ile	Thr	Ala	Ala	Leu					
				725					730					735						
Gly	Ile	Ser	Tyr	Gly	Arg	Lys	Lys	Arg	Gln	Arg	Arg	Arg	Arg	Pro	Pro					
				740					745					750						
Gln	Gly	Ser	Gln	Thr	His	Gln	Val	Ser	Leu	Ser	Lys	Gln	Pro	Thr	Ser					
				755					760					765						
Gln	Ser	Lys	Gly	Glu	Pro	Thr	Gly	Pro	Lys	Glu										
770					775															

<210> 59
 <211> 2148
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c Nef-Tatm fusion

<400> 59
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 gcgacgcgat cttgcgtgcc tacggacccc aaccccagg aggtggtgct gggaaacgtg 180
 accgagtact tcaacatgtg gaagaataac atggtggatc agatgcacga ggacatcatc 240
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 gactgtgacg acgtcaacac caccaacagc actaccacca ccagcaacgg ctggaccgga 360
 gagattcgga agggcgagat caagaactgc tccttcaata tcacgacctc gatcagagac 420
 aaggtgcaga aggaatacgc gctgttttat aatctcgatg tggccccat cgacgacgac 480
 aatgccacca ccaagaacaa gacgacgcgt aatttcagac tcattcactg caacagcagc 540
 gtcatgacgc aggcctgccc caaggtgtcc ttcgaaccaa tcccgatcca ttactgtgcc 600
 cctgccggat tcgcgatcct caagtgtaac aacaagacct tcgacgggaa gggcctgtgc 660
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seqlist.txt

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aagatcatcg gcgacatccg gcaggcccat tgcgaacctt cccgcgcca gtggaataac 960
accctgaagc agatcgtgat caagctgaga gagcactttg gaaacaagac catcaagttc 1020
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aacacagagg gaaactccac tatcaccctc ccttgccgca tcaagcagat catcaacatg 1200
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cggagacagc gacgaagacc tcctcaaggc agtcagactc atcaagttt tctatcaag 2100
caaccacact cccaatccaa aggggagccg acaggccgca aggaataa 2148

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<210> 60
 <211> 715
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c Nef-Tatm fusion

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<400> 60
Met Ala Glu Gln Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp
1      5      10      15
Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
20     25     30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35     40     45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
50     55     60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65     70     75
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
85     90     95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100    105    110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115    120    125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130    135    140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145    150    155
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165    170    175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180    185    190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195    200    205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210    215    220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225    230    235
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
245    250    255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
260    265    270

```

seqlist.txt

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Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
      275      280      285
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
      290      295      300
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305      310      315      320
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
      325      330      335
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
      340      345      350
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
      355      360      365
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Thr Glu Gly
      370      375      380
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met
385      390      395      400
Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
      405      410      415
Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly
      420      425      430
Gly Thr Glu Gly Asn Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro
      435      440      445
Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr
      450      455      460
Lys Val Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
465      470      475      480
Arg Arg Val Val Gln Arg Met Val Gly Phe Pro Val Thr Pro Gln Val
      485      490      495
Pro Leu Arg Pro Met Thr Tyr Lys Ala Ala Val Asp Leu Ser His Phe
      500      505      510
Leu Lys Glu Lys Gly Gly Leu Glu Gly Leu Ile His Ser Gln Arg Arg
      515      520      525
Gln Asp Ile Leu Asp Leu Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro
      530      535      540
Asp Trp Gln Asn Tyr Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr
545      550      555      560
Phe Gly Trp Cys Tyr Lys Leu Val Pro Val Glu Pro Asp Lys Val Glu
      565      570      575
Glu Ala Asn Lys Gly Glu Asn Thr Ser Leu Leu His Pro Val Ser Leu
      580      585      590
His Gly Met Asp Asp Pro Glu Arg Glu Val Leu Glu Trp Arg Phe Asp
      595      600      605
Ser Arg Leu Ala Phe His His Val Ala Arg Glu Leu His Pro Glu Tyr
      610      615      620
Phe Lys Asn Cys Thr Ser Glu Pro Val Asp Pro Arg Leu Glu Pro Trp
625      630      635      640
Lys His Pro Gly Ser Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys
      645      650      655
Lys Lys Cys Cys Phe His Cys Gln Val Cys Phe Ile Thr Ala Ala Leu
      660      665      670
Gly Ile Ser Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Pro Pro
      675      680      685
Gln Gly Ser Gln Thr His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser
      690      695      700
Gln Ser Lys Gly Glu Pro Thr Gly Pro Lys Glu
705      710      715

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<210> 61

<211> 1887

<212> DNA

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c trNef fusion

<400> 61

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seqlist.txt

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accgagtact tcaacatgtg gaagaataac atggtggatc agatgcacga ggacatcatc 240
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aatgccacca ccaagaacaa gacgacgctt aatttcagac tcattcactg caacagcagc 540
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cctgccggat tcgcatcctt caagtgtaac aacaagacct tcgacgggaa gggcctgtgc 660
accaacgtca gcacggtgca gtgcacccat ggcacccgcc ccgtcgtgag caccagctg 720
ctgctgaacg ggtccctggc tgaggaggag gtggtgatcc ggtcggacaa cttcatggac 780
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aagatcatcg gcgacatccg gcaggcccat tgcaacctct cccgcgcca gtggaataac 960
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ggctacttcc ctgattggca gaactacaca ccagggccag gggtcagata tccactgacc 1680
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gaagtgttag agtggagggt tgacagccgc ctagcatttc atcacgtggc ccgagagctg 1860
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<210> 62

<211> 628

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c trNef fusion

<400> 62

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Lys Glu Ala Thr Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
          20          25          30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
          35          40          45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
          50          55          60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65          70          75
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
          85          90          95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
          100          105          110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
          115          120          125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
          130          135          140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145          150          155
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
          165          170          175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
          180          185          190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
          195          200          205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser

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seqlist.txt

[illegible]

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<210> 63
<211> 1517
<212> DNA
<213> Artificial sequence
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<220>
<223> HIV-1 Nef p17/24 fusion

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<400> 63
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ttgaacggtt tgccgtgaac ccaggcctgc tggaaacatc tgagggatgt cgccagatcc 180
tggggcaatt gcagccatcc ctccagaccg ggagtgaaga gctgaggtcc ttgtataaca 240

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seqlist.txt

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agaaggcctt	ttctcctgag	gttatcccca	tgttctccgc	tttgagtga	ggggccactc	540
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<210> 64

<211> 2976

<212> DNA

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 trNef fusion

<400> 64

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gactgtgacg	acgtcaacac	caccaacagc	actaccacca	ccagcaacgg	ctggaccgga	360
gagattcgga	agggcgagat	caagaactgc	tccttcaata	tcacgacctc	gatcagagac	420
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seqlist.txt

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<210> 65

<211> 991

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 trNef fusion

<400> 65

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Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
20     25     30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35     40     45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
50     55     60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65     70     75
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
85     90     95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100    105    110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115    120    125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130    135    140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145    150    155
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165    170    175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180    185    190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195    200    205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210    215    220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225    230    235
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
245    250    255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
260    265    270
Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
275    280    285
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
290    295    300
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305    310    315
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
325    330    335
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
340    345    350

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seqlist.txt

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	370					375					380				
Asn	Ser	Thr	Ile	Thr	Leu	Pro	Cys	Arg	Ile	Lys	Gln	Ile	Ile	Asn	Met
385					390					395					400
Trp	Gln	Glu	Val	Gly	Lys	Ala	Met	Tyr	Ala	Pro	Pro	Ile	Gly	Gly	Gln
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Ile	Arg	Cys	Ser	Asn	Ile	Thr	Gly	Leu	Leu	Leu	Thr	Arg	Asp	Gly	
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Gly	Thr	Glu	Gly	Asn	Gly	Thr	Glu	Asn	Glu	Thr	Glu	Ile	Phe	Arg	Pro
		435					440					445			
Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	Tyr
	450					455					460				
Lys	Val	Val	Lys	Val	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	Ala	Lys
465					470					475					480
Arg	Arg	Val	Val	Gln	Arg	Met	Gly	Ala	Arg	Ala	Ser	Val	Leu	Ser	Gly
				485					490					495	
Gly	Glu	Leu	Asp	Arg	Trp	Glu	Lys	Ile	Arg	Leu	Arg	Pro	Gly	Gly	Lys
			500					505					510		
Lys	Lys	Tyr	Lys	Leu	Lys	His	Ile	Val	Trp	Ala	Ser	Arg	Glu	Leu	Glu
		515					520					525			
Arg	Phe	Ala	Val	Asn	Pro	Gly	Leu	Leu	Glu	Thr	Ser	Glu	Gly	Cys	Arg
	530					535					540				
Gln	Ile	Leu	Gly	Gln	Leu	Gln	Pro	Ser	Leu	Gln	Thr	Gly	Ser	Glu	Glu
545					550					555					560
Leu	Arg	Ser	Leu	Tyr	Asn	Thr	Val	Ala	Thr	Leu	Tyr	Cys	Val	His	Gln
				565					570					575	
Arg	Ile	Glu	Ile	Lys	Asp	Thr	Lys	Glu	Ala	Leu	Asp	Lys	Ile	Glu	Glu
			580					585					590		
Glu	Gln	Asn	Lys	Ser	Lys	Lys	Lys	Ala	Gln	Gln	Ala	Ala	Ala	Asp	Thr
		595					600								
Gly	His	Ser	Asn	Gln	Val	Ser	Gln	Asn	Tyr	Pro	Ile	Val	Gln	Asn	Ile
	610					615					620				
Gln	Gly	Gln	Met	Val	His	Gln	Ala	Ile	Ser	Pro	Arg	Thr	Leu	Asn	Ala
625					630					635					640
Trp	Val	Lys	Val	Val	Glu	Glu	Lys	Ala	Phe	Ser	Pro	Glu	Val	Ile	Pro
				645					650					655	
Met	Phe	Ser	Ala	Leu	Ser	Glu	Gly	Ala	Thr	Pro	Gln	Asp	Leu	Asn	Thr
			660					665					670		
Met	Leu	Asn	Thr	Val	Gly	Gly	His	Gln	Ala	Ala	Met	Gln	Met	Leu	Lys
		675					680					685			
Glu	Thr	Ile	Asn	Glu	Glu	Ala	Ala	Glu	Trp	Asp	Arg	Val	His	Pro	Val
	690					695					700				
His	Ala	Gly	Pro	Ile	Ala	Pro	Gly	Gln	Met	Arg	Glu	Pro	Arg	Gly	Ser
705					710					715					720
Asp	Ile	Ala	Gly	Thr	Thr	Ser	Thr	Leu	Gln	Glu	Gln	Ile	Gly	Trp	Met
				725					730					735	
Thr	Asn	Asn	Pro	Pro	Ile	Pro	Val	Gly	Glu	Ile	Tyr	Lys	Arg	Trp	Ile
			740					745					750		
Ile	Leu	Gly	Leu	Asn	Lys	Ile	Val	Arg	Met	Tyr	Ser	Pro	Thr	Ser	Ile
		755					760					765			
Leu	Asp	Ile	Arg	Gln	Gly	Pro	Lys	Glu	Pro	Phe	Arg	Asp	Tyr	Val	Asp
	770					775					780				
Arg	Phe	Tyr	Lys	Thr	Leu	Arg	Ala	Glu	Gln	Ala	Ser	Gln	Glu	Val	Lys
785					790					795					800
Asn	Trp	Met	Thr	Glu	Thr	Leu	Leu	Val	Gln	Asn	Ala	Asn	Pro	Asp	Cys
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Lys	Thr	Ile	Leu	Lys	Ala	Leu	Gly	Pro	Ala	Ala	Thr	Leu	Glu	Glu	Met
			820					825					830		
Met	Thr	Ala	Cys	Gln	Gly	Val	Gly	Gly	Pro	Gly	His	Lys	Ala	Arg	Val
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Leu	Met	Val	Gly	Phe	Pro	Val	Thr	Pro	Gln	Val	Pro	Leu	Arg	Pro	Met
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Thr	Tyr	Lys	Ala	Ala	Val	Asp	Leu	Ser	His	Phe	Leu	Lys	Glu	Lys	Gly
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Gly	Leu	Glu	Gly	Leu	Ile	His	Ser	Gln	Arg	Arg	Gln	Asp	Ile	Leu	Asp
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seqlist.txt

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Lys Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly
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Glu Asn Thr Ser Leu Leu His Pro Val Ser Leu His Gly Met Asp Asp
          945          950          955          960
Pro Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe
          965          970          975
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<210> 66
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 <223> HIV-1 ds-gp120c p17/24 trNef Tatm fusion

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seqlist.txt

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cacacacaag gctactttccc tgattggcag aactacacac caggggccagg ggtcagatat 2760
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gccataaag gagagaacac cagcttgtaa caccctgtga gcctgcatgg aatggatgac 2880
cctgagagag aagtgttaga gtggagggtt gacagccgcc tagcatttca tcacgtggcc 2940
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gagccctgga agcatccagg aagtcagcct aaaactgctt gtaccaattg ctattgtaaa 3060
aagtgttgct ttcattgcca agtttgtttc ataacagctg ccttaggcat ctcctatggc 3120
aggaagaagc ggagacagcg acgaagacct cctcaaggca gtcagactca tcaagtttct 3180
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<210> 67

<211> 1078

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 trNef Tatm fusion

<400> 67

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Met Ala Glu Gln Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp
 1      5      10      15
Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
 20      25      30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
 35      40      45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
 50      55      60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
 65      70      75
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
 85      90      95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100      105      110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115      120      125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130      135      140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145      150      155
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165      170      175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180      185      190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195      200      205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210      215      220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225      230      235
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
245      250      255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
260      265      270
Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
275      280      285
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
290      295      300
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305      310      315
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
325      330      335
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
340      345      350
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
355      360      365
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
370      375      380
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met

```

seqlist.txt

```

385      390      395      400
Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
405 Ser Asn Ile Thr Gly 410 Leu Leu Leu Thr Arg Asp Gly
Ile Arg Cys Ser 420 Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro
435 Gly Thr Glu Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr
450 Gly Gly Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
465 Lys Val Val Lys Val Gln Arg Met Gly Ala Arg Ala Ser Val Leu Ser Gly
485 Arg Arg Val Val Gln Arg Met Gly Ala Arg Ala Ser Val Leu Ser Gly
490 Gly Glu Leu Asp Arg Trp Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys
500 Lys Lys Tyr Lys Leu Lys His Ile Val Trp Ala Ser Arg Glu Leu Glu
515 Arg Phe Ala Val Asn Pro Gly Leu Leu Glu Thr Ser Glu Gly Cys Arg
530 Gln Ile Leu Gly Gln Leu Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu
545 Leu Arg Ser Leu Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Gln
565 Arg Ile Glu Ile Lys Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu
580 Glu Gln Asn Lys Ser Lys Lys Lys Ala Gln Gln Ala Ala Asp Thr
595 Gly His Ser Asn Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Ile
610 Gln Gly Gln Met Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala
625 Trp Val Lys Val Val Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro
645 Met Phe Ser Ala Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr
660 Met Leu Asn Thr Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys
675 Glu Thr Ile Asn Glu Glu Ala Ala Glu Trp Asp Arg Val His Pro Val
690 His Ala Gly Pro Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser
705 Asp Ile Ala Gly Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met
725 Thr Asn Asn Pro Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile
740 Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile
755 Leu Asp Ile Arg Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp
770 Arg Phe Tyr Lys Thr Leu Arg Ala Glu Gln Ala Ser Gln Glu Val Lys
785 Asn Trp Met Thr Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys
805 Lys Thr Ile Leu Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met
820 Met Thr Ala Cys Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val
835 Leu Met Val Gly Phe Pro Val Thr Pro Gln Val Pro Leu Arg Pro Met
850 Thr Tyr Lys Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly
865 Gly Leu Glu Gly Leu Ile His Ser Gln Arg Arg Gln Asp Ile Leu Asp
885 Leu Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr
900 Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr
915 Lys Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly

```

seqlist.txt

930		935		940	
Glu Asn Thr Ser Leu	Leu His Pro Val Ser Leu His Gly Met Asp Asp				
945	950	955	960		
Pro Glu Arg Glu Val	Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe				
	965	970	975		
His His Val Ala Arg	Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr				
	980	985	990		
Ser Glu Pro Val Asp	Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser				
	995	1000	1005		
Gln Pro Lys Thr Ala Cys	Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe				
	1010	1015	1020		
His Cys Gln Val Cys Phe	Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly				
	1025	1030	1035		
Arg Lys Lys Arg Arg	Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr				
	1045	1050	1055		
His Gln Val Ser Leu	Ser Lys Gln Pro Thr Ser Gln Ser Lys Gly Glu				
	1060	1065	1070		
Pro Thr Gly Pro Lys Glu					
	1075				

<210> 68
 <211> 3429
 <212> DNA
 <213> Artificial sequence

<220>
 <223> HIV-1 ds-gp120c p17/24 Nef Tatm fusion

<400> 68

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gcgacgcatt	cttgcgtgcc	tacggacccc	aacccccagg	aggtgggtg	gggaaacgtg	180
accgagtact	tcaacatgtg	gaagaataac	atggtggatc	agatgcacga	ggacatcatc	240
tctctgtggg	accagtcctt	gaagccctgc	gtgaagctga	cgcctctctg	cgtgacactg	300
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gagattcggg	agggcgagat	caagaactgc	tccttcaata	tcacgacctc	gatcagagac	420
aaggtgcaga	aggaatacgc	gctgttttat	aatctcgaat	tggtcccat	cgacgacgac	480
aatgccacca	ccaagaacaa	gacgacgcgt	aatttcagac	tcattcactg	caacagcagc	540
gtcatgacgc	aggcctgccc	caaggtgtcc	ttcgaaccaa	tcccgatcca	ttactgtgcc	600
cctgcgggat	tcgcgatcct	caagtgtaac	aacaagacct	tcgacgggaa	gggcctgtgc	660
accaacgtca	gcacggtgca	gtgcacccat	ggcatccgcc	ccgtcgtgag	cacccagctg	720
ctgctgaacg	ggtccctggc	tgaggaggag	gtggtgatcc	ggtcggacaa	cttcatggac	780
aacaccaaga	caatcatcgt	ccagctgaac	gagtcgtgtg	cgattaactg	taccggtcct	840
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ctgaggtcct	tgtataaac	agtggctacc	ctctactgcg	tacaccagag	gatcgagatt	1740
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gcccagcagg	cagctgctga	cactgggcat	agcaaccagg	tatcacagaa	ctatcctatt	1860
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caggccgcca	tgcaaatgtt	gaaggagact	atcaacgagg	aggcagccga	gtgggacaga	2100
gtgcatcccc	tccacgctgg	cccaatcgcg	cccggacaga	tgccggagcc	tcgcggtcct	2160
gacattgccg	gcaccacctc	tacactgcaa	gagcaaatcg	gatggatgac	caacaatcct	2220
cccatcccg	ttggagaaat	ctataaacgg	tgatcattc	tcggtctcaa	taaaattggt	2280

seqlist.txt

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aactggatga cggagacact cctggtacag aacgctaacc ccgactgcaa aacaatcttg 2460
aaggcactag gcccggctgc caccctggaa gagatgatga ccgctgtca gggagttagc 2520
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<210> 69

<211> 1142

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 Nef Tatm fusion

<400> 69

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Met Ala Glu Gln Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp
1      5      10      15
Lys Glu Ala Thr Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
20     25     30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35     40     45
Asp Pro Asn Pro Gln Glu Val Leu Gly Asn Val Thr Glu Tyr Phe
50     55     60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65     70     75
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
85     90     95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100    105    110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115    120    125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130    135    140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145    150    155
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165    170    175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180    185    190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195    200    205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210    215    220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225    230    235
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
245    250    255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
260    265    270
Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Thr Arg Lys Gly Ile
275    280    285
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
290    295    300

```

seqlist.txt

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Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305 310 315 320
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
325 330 335
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
340 345 350
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
355 360 365
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Thr Glu Gly
370 375 380
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met
385 390 395 400
Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
405 410 415
Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly
420 425 430
Gly Thr Glu Gly Asn Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro
435 440 445
Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr
450 455 460
Lys Val Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
465 470 475 480
Arg Arg Val Val Gln Arg Met Gly Ala Arg Ala Ser Val Leu Ser Gly
485 490 495
Gly Glu Leu Asp Arg Trp Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys
500 505 510
Lys Lys Tyr Lys Leu Lys His Ile Val Trp Ala Ser Arg Glu Leu Glu
515 520 525
Arg Phe Ala Val Asn Pro Gly Leu Leu Glu Thr Ser Glu Gly Cys Arg
530 535 540
Gln Ile Leu Gly Gln Leu Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu
545 550 555 560
Leu Arg Ser Leu Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Gln
565 570 575
Arg Ile Glu Ile Lys Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu
580 585 590
Glu Gln Asn Lys Ser Lys Lys Glu Ala Gln Gln Ala Ala Asp Thr
595 600 605
Gly His Ser Asn Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Ile
610 615 620
Gln Gly Gln Met Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala
625 630 635 640
Trp Val Lys Val Val Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro
645 650 655
Met Phe Ser Ala Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr
660 665 670
Met Leu Asn Thr Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys
675 680 685
Glu Thr Ile Asn Glu Glu Ala Ala Glu Trp Asp Arg Val His Pro Val
690 695 700
His Ala Gly Pro Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser
705 710 715 720
Asp Ile Ala Gly Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met
725 730 735
Thr Asn Asn Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile
740 745 750
Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile
755 760 765
Leu Asp Ile Arg Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp
770 775 780
Arg Phe Tyr Lys Thr Leu Arg Ala Glu Gln Ala Ser Gln Glu Val Lys
785 790 795 800
Asn Trp Met Thr Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys
805 810 815
Lys Thr Ile Leu Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met
820 825 830
Met Thr Ala Cys Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val
835 840 845

```

seqlist.txt

```

Leu Met Gly Gly Lys Trp Ser Lys Ser Ser Val Val Gly Trp Pro Thr
850      855      860
Val Arg Glu Arg Met Arg Arg Ala Glu Pro Ala Ala Asp Gly Val Gly
865      870      875      880
Ala Ala Ser Arg Asp Leu Glu Lys His Gly Ala Ile Thr Ser Ser Asn
885      890      895
Thr Ala Ala Thr Asn Ala Ala Cys Ala Trp Leu Glu Ala Gln Glu Glu
900      905      910
Glu Glu Val Gly Phe Pro Val Thr Pro Gln Val Pro Leu Arg Pro Met
915      920      925
Thr Tyr Lys Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly
930      935      940
Gly Leu Glu Gly Leu Ile His Ser Gln Arg Arg Gln Asp Ile Leu Asp
945      950      955      960
Leu Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr
965      970      975
Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr
980      985      990
Lys Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly
995      1000      1005
Glu Asn Thr Ser Leu Leu His Pro Val Ser Leu His Gly Met Asp Asp
1010      1015      1020
Pro Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe
1025      1030      1035      1040
His His Val Ala Arg Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr
1045      1050      1055
Ser Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
1060      1065      1070
Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
1075      1080      1085
His Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly
1090      1095      1100
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
1105      1110      1115      1120
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1125      1130      1135
Pro Thr Gly Pro Lys Glu
1140

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<210> 70
 <211> 3426
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c p17/24 mNef Tatm fusion

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<400> 70
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aaggtgcaga aggaatacgc gctgttttat aatctcgatg tgggtcccat cgacgacgac 480
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gtcatgacgc aggcctgccc caaggtgtcc ttcgaaccaa tcccgatcca ttactgtgcc 600
cctgcccgat tcgcgatcct caagtgtaac aacaagacct tcgacgggaa gggcctgtgc 660
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aatcagagtt ctggcggaga ccccgagatc gtgcggcact ccttcaactg cgggggcgag 1080
ttcttctact gcgatacgac acagctcttc aactccacct ggaacggcac cgagggaac 1140

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seqlist.txt

```

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gtccaaaaaca ttcagggcca gatggttcac caggccatca gccccggac gctcaatgcc 1920
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tcctatggca ggaagaagcg gagacagcga cgaagacctc ctcaaggcag tcagactcat 3360
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gaataa

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<210> 71

<211> 1141

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 mNef Tatm fusion

<400> 71

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Met Ala Glu Gln Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp
1      5      10      15
Lys Glu Ala Thr Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
20     25     30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35     40     45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
50     55     60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65     70     75
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
85     90     95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100    105    110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115    120    125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130    135    140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp

```

seqlist.txt

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145      150      155      160
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165      170      175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180      185
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195      200
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210      215      220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225      230      235      240
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
245      250      255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
260      265
Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
275      280      285
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
290      295      300
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305      310      315      320
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
325      330      335
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
340      345      350
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
355      360      365
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
370      375      380
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met
385      390      395      400
Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
405      410      415
Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly
420      425      430
Gly Thr Glu Gly Asn Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro
435      440      445
Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr
450      455      460
Lys Val Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
465      470      475      480
Arg Arg Val Val Gln Arg Met Gly Ala Arg Ala Ser Val Leu Ser Gly
485      490      495
Gly Glu Leu Asp Arg Trp Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys
500      505      510
Lys Lys Tyr Lys Leu Lys His Ile Val Trp Ala Ser Arg Glu Leu Glu
515      520      525
Arg Phe Ala Val Asn Pro Gly Leu Leu Glu Thr Ser Glu Gly Cys Arg
530      535      540
Gln Ile Leu Gly Gln Leu Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu
545      550      555      560
Leu Arg Ser Leu Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Gln
565      570      575
Arg Ile Glu Ile Lys Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu
580      585      590
Glu Gln Asn Lys Ser Lys Lys Lys Ala Gln Gln Ala Ala Ala Asp Thr
595      600      605
Gly His Ser Asn Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Ile
610      615      620
Gln Gly Gln Met Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala
625      630      635      640
Trp Val Lys Val Val Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro
645      650      655
Met Phe Ser Ala Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr
660      665      670
Met Leu Asn Thr Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys
675      680      685
Glu Thr Ile Asn Glu Glu Ala Ala Glu Trp Asp Arg Val His Pro Val

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seqlist.txt

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        690                      695                      700
His Ala Gly Pro Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser
705 Asp Ile Ala Gly Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met
725 Thr Asn Asn Pro Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile
740 Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile
755 Leu Asp Ile Arg Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp
770 Arg Phe Tyr Lys Thr Leu Arg Ala Glu Gln Ala Ser Gln Glu Val Lys
785 Asn Trp Met Thr Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys
805 Lys Thr Ile Leu Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met
820 Met Thr Ala Cys Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val
835 Leu Met Gly Lys Trp Ser Lys Ser Ser Val Val Gly Trp Pro Thr Val
850 Arg Glu Arg Met Arg Arg Ala Glu Pro Ala Ala Asp Gly Val Gly Ala
865 Ala Ser Arg Asp Leu Glu Lys His Gly Ala Ile Thr Ser Ser Asn Thr
885 Ala Ala Thr Asn Ala Ala Cys Ala Trp Leu Glu Ala Gln Glu Glu
900 Glu Val Gly Phe Pro Val Thr Pro Gln Val Pro Leu Arg Pro Met Thr
915 Tyr Lys Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly Gly
930 Leu Glu Gly Leu Ile His Ser Gln Arg Arg Gln Asp Ile Leu Asp Leu
945 Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr Thr
965 Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr Lys
980 Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly Glu
995 Asn Thr Ser Leu Leu His Pro Val Ser Leu His Gly Met Asp Asp Pro
1010 Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe His
1025 His Val Ala Arg Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr Ser
1045 Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gln
1060 Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe His
1075 Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly Arg
1090 Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His
1105 Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Lys Gly Glu Pro
1125 Thr Gly Pro Lys Glu
1140

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<210> 72

<211> 3429

<212> DNA

<213> Artificial sequence

<220>

<223> HIV-1 ds-gp120c p17/24 L1-Nef Tatm fusion

<400> 72

seqlist.txt

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<210> 73

<211> 1142

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 L1-Nef Tatm fusion

<400> 73

seqlist.txt

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			20				25					30			
Asp	Thr	Glu	Val	His	Asn	Val	Trp	Ala	Thr	His	Ala	Cys	Val	Pro	Thr
		35					40				45				
Asp	Pro	Asn	Pro	Gln	Glu	Val	Leu	Gly	Asn	Val	Thr	Glu	Tyr	Phe	
	50				55					60					
Asn	Met	Trp	Lys	Asn	Asn	Met	Val	Asp	Gln	Met	His	Glu	Asp	Ile	Ile
65				70					75						80
Ser	Leu	Trp	Asp	Gln	Ser	Leu	Lys	Pro	Cys	Val	Lys	Leu	Thr	Pro	Leu
			85						90					95	
Cys	Val	Thr	Leu	Asp	Cys	Asp	Asp	Val	Asn	Thr	Thr	Asn	Ser	Thr	Thr
			100					105						110	
Thr	Thr	Ser	Asn	Gly	Trp	Thr	Gly	Glu	Ile	Arg	Lys	Gly	Glu	Ile	Lys
		115					120					125			
Asn	Cys	Ser	Phe	Asn	Ile	Thr	Ser	Ile	Arg	Asp	Lys	Val	Gln	Lys	
	130				135					140					
Glu	Tyr	Ala	Leu	Phe	Tyr	Asn	Leu	Asp	Val	Val	Pro	Ile	Asp	Asp	Asp
145				150					155						160
Asn	Ala	Thr	Thr	Lys	Asn	Lys	Thr	Thr	Arg	Asn	Phe	Arg	Leu	Ile	His
				165					170					175	
Cys	Asn	Ser	Ser	Val	Met	Thr	Gln	Ala	Cys	Pro	Lys	Val	Ser	Phe	Glu
			180					185					190		
Pro	Ile	Pro	Ile	His	Tyr	Cys	Ala	Pro	Ala	Gly	Phe	Ala	Ile	Leu	Lys
		195					200					205			
Cys	Asn	Asn	Lys	Thr	Phe	Asp	Gly	Lys	Gly	Leu	Cys	Thr	Asn	Val	Ser
	210					215					220				
Thr	Val	Gln	Cys	Thr	His	Gly	Ile	Arg	Pro	Val	Val	Ser	Thr	Gln	Leu
225				230					235						240
Leu	Leu	Asn	Gly	Ser	Leu	Ala	Glu	Glu	Glu	Val	Val	Ile	Arg	Ser	Asp
			245					250						255	
Asn	Phe	Met	Asp	Asn	Thr	Lys	Thr	Ile	Ile	Val	Gln	Leu	Asn	Glu	Ser
			260					265					270		
Val	Ala	Ile	Asn	Cys	Thr	Arg	Pro	Asn	Asn	Asn	Thr	Arg	Lys	Gly	Ile
		275					280					285			
His	Ile	Gly	Pro	Gly	Arg	Ala	Phe	Tyr	Ala	Ala	Arg	Lys	Ile	Ile	Gly
	290				295						300				
Asp	Ile	Arg	Gln	Ala	His	Cys	Asn	Leu	Ser	Arg	Ala	Gln	Trp	Asn	Asn
305				310					315						320
Thr	Leu	Lys	Gln	Ile	Val	Ile	Lys	Leu	Arg	Glu	His	Phe	Gly	Asn	Lys
			325						330					335	
Thr	Ile	Lys	Phe	Asn	Gln	Ser	Ser	Gly	Gly	Asp	Pro	Glu	Ile	Val	Arg
			340					345				350			
His	Ser	Phe	Asn	Cys	Gly	Gly	Glu	Phe	Phe	Tyr	Cys	Asp	Thr	Thr	Gln
		355					360					365			
Leu	Phe	Asn	Ser	Thr	Trp	Asn	Gly	Thr	Glu	Gly	Asn	Asn	Thr	Glu	Gly
	370				375						380				
Asn	Ser	Thr	Ile	Thr	Leu	Pro	Cys	Arg	Ile	Lys	Gln	Ile	Ile	Asn	Met
385					390					395					400
Trp	Gln	Glu	Val	Gly	Lys	Ala	Met	Tyr	Ala	Pro	Pro	Ile	Gly	Gly	Gln
			405						410					415	
Ile	Arg	Cys	Ser	Ser	Asn	Ile	Thr	Gly	Leu	Leu	Leu	Thr	Arg	Asp	Gly
			420					425					430		
Gly	Thr	Glu	Gly	Asn	Gly	Thr	Glu	Asn	Glu	Thr	Glu	Ile	Phe	Arg	Pro
		435					440					445			
Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	Tyr
	450					455					460				
Lys	Val	Val	Lys	Val	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	Ala	Lys
465					470					475					480
Arg	Arg	Val	Val	Gln	Arg	Met	Gly	Ala	Arg	Ala	Ser	Val	Leu	Ser	Gly
				485					490					495	
Gly	Glu	Leu	Asp	Arg	Trp	Glu	Lys	Ile	Arg	Leu	Arg	Pro	Gly	Gly	Lys
			500					505					510		
Lys	Lys	Tyr	Lys	Leu	Lys	His	Ile	Val	Trp	Ala	Ser	Arg	Glu	Leu	Glu
		515					520					525			
Arg	Phe	Ala	Val	Asn	Pro	Gly	Leu	Leu	Glu	Thr	Ser	Glu	Gly	Cys	Arg
	530					535					540				

seqlist.txt

Gln Ile Leu Gly Gln Leu Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu
 545 550 555 560
 Leu Arg Ser Leu Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Gln
 565 570 575
 Arg Ile Glu Ile Lys Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu
 580 585 590
 Glu Gln Asn Lys Ser Lys Lys Lys Ala Gln Gln Ala Ala Asp Thr
 595 600 605
 Gly His Ser Asn Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Ile
 610 615 620
 Gln Gly Gln Met Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala
 625 630 635 640
 Trp Val Lys Val Val Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro
 645 650 655
 Met Phe Ser Ala Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr
 660 665 670
 Met Leu Asn Thr Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys
 675 680 685
 Glu Thr Ile Asn Glu Glu Ala Ala Glu Trp Asp Arg Val His Pro Val
 690 695 700
 His Ala Gly Pro Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser
 705 710 715 720
 Asp Ile Ala Gly Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met
 725 730 735
 Thr Asn Asn Pro Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile
 740 745 750
 Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile
 755 760 765
 Leu Asp Ile Arg Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp
 770 775 780
 Arg Phe Tyr Lys Thr Leu Arg Ala Glu Gln Ala Ser Gln Glu Val Lys
 785 790 795 800
 Asn Trp Met Thr Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys
 805 810 815
 Lys Thr Ile Leu Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met
 820 825 830
 Met Thr Ala Cys Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val
 835 840 845
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 850 855 860
 Val Arg Glu Arg Met Arg Arg Ala Glu Pro Ala Ala Asp Gly Val Gly
 865 870 875 880
 Ala Ala Ser Arg Asp Leu Glu Lys His Gly Ala Ile Thr Ser Ser Asn
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 Thr Ala Ala Thr Asn Ala Ala Cys Ala Trp Leu Glu Ala Gln Glu Glu
 900 905 910
 Glu Glu Val Gly Phe Pro Val Thr Pro Gln Val Pro Leu Arg Pro Met
 915 920 925
 Thr Tyr Lys Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly
 930 935 940
 Gly Leu Glu Gly Leu Ile His Ser Gln Arg Arg Gln Asp Ile Leu Asp
 945 950 955 960
 Leu Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr
 965 970 975
 Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr
 980 985 990
 Lys Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly
 995 1000 1005
 Glu Asn Thr Ser Ala Leu His Pro Val Ser Leu His Gly Met Asp Asp
 1010 1015 1020
 Pro Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe
 1025 1030 1035 1040
 His His Val Ala Arg Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr
 1045 1050 1055
 Ser Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
 1060 1065 1070
 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
 1075 1080 1085

seqlist.txt

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 His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Lys Gly Glu
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 Pro Thr Gly Pro Lys Glu
 1140

<210> 74
 <211> 3429
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c p17/24 L2-Nef Tatm fusion

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seqlist.txt

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<210> 75

<211> 1142

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 L2-Nef Tatm fusion

<400> 75

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Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
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Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35      40      45
Asp Pro Asn Pro Gln Glu Val Leu Gly Asn Val Thr Glu Tyr Phe
50      55      60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65      70      75      80
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
85      90      95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100      105      110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115      120      125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130      135      140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145      150      155      160
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165      170      175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180      185      190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195      200      205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210      215      220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225      230      235      240
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
245      250      255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
260      265      270
Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
275      280      285
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
290      295      300
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305      310      315      320
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
325      330      335
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
340      345      350
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
355      360      365
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
370      375      380
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met

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seqlist.txt

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Gly	Thr	Glu	Gly	Asn	Gly	Thr	Glu	Asn	Glu	Thr	Glu	Ile	Phe	Arg	Pro	
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Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	Tyr	
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Lys	Val	Val	Lys	Val	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	Ala	Lys	
465					470					475					480	
Arg	Arg	Val	Val	Gln	Arg	Met	Gly	Ala	Arg	Ala	Ser	Val	Leu	Ser	Gly	
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Gly	Glu	Leu	Asp	Arg	Trp	Glu	Lys	Ile	Arg	Leu	Arg	Pro	Gly	Gly	Lys	
			500					505					510			
Lys	Lys	Tyr	Lys	Leu	Lys	His	Ile	Val	Trp	Ala	Ser	Arg	Glu	Leu	Glu	
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Arg	Phe	Ala	Val	Asn	Pro	Gly	Leu	Leu	Glu	Thr	Ser	Glu	Gly	Cys	Arg	
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Gln	Ile	Leu	Gly	Gln	Leu	Gln	Pro	Ser	Leu	Gln	Thr	Gly	Ser	Glu	Glu	
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Leu	Arg	Ser	Leu	Tyr	Asn	Thr	Val	Ala	Thr	Leu	Tyr	Cys	Val	His	Gln	
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Arg	Ile	Glu	Ile	Lys	Asp	Thr	Lys	Glu	Ala	Leu	Asp	Lys	Ile	Glu	Glu	
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Gly	His	Ser	Asn	Gln	Val	Ser	Gln	Asn	Tyr	Pro	Ile	Val	Gln	Asn	Ile	
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Gln	Gly	Gln	Met	Val	His	Gln	Ala	Ile	Ser	Pro	Arg	Thr	Leu	Asn	Ala	
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Trp	Val	Lys	Val	Val	Glu	Glu	Lys	Ala	Phe	Ser	Pro	Glu	Val	Ile	Pro	
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Met	Leu	Asn	Thr	Val	Gly	Gly	His	Gln	Ala	Ala	Met	Gln	Met	Leu	Lys	
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Asp	Ile	Ala	Gly	Thr	Thr	Ser	Thr	Leu	Gln	Glu	Gln	Ile	Gly	Trp	Met	
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Thr	Asn	Asn	Pro	Pro	Ile	Pro	Val	Gly	Glu	Ile	Tyr	Lys	Arg	Trp	Ile	
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			900					905					910			
Glu	Glu	Val	Gly	Phe	Pro	Val	Thr	Pro	Gln	Val	Pro	Leu	Arg	Pro	Met	
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Thr	Tyr	Lys	Ala	Ala	Val	Asp	Leu	Ser	His	Phe	Leu	Lys	Glu	Lys	Gly	

seqlist.txt

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Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr
          980          985          990
Lys Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly
          995          1000          1005
Glu Asn Thr Ser Leu Ala His Pro Val Ser Leu His Gly Met Asp Asp
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Pro Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe
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His His Val Ala Arg Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr
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Ser Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
          1060          1065          1070
Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
          1075          1080          1085
His Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly
          1090          1095          1100
Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
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<210> 76
 <211> 3429
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c p17/24 LL-Nef Tatm fusion

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seqlist.txt

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<210> 77

<211> 1142

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 LL-Nef Tatm fusion

<400> 77

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Lys Glu Ala Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
20     25     30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35     40     45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
50     55     60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65     70     75     80
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
85     90     95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
100    105    110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
115    120    125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
130    135    140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145    150    155    160
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
165    170    175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
180    185    190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
195    200    205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210    215    220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225    230    235    240

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seqlist.txt

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      275
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
      290
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
      305
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
      325
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
      340
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
      355
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
      370
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Lys Val Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
      465
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      480
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      500
Lys Lys Tyr Lys Leu Lys His Ile Val Trp Ala Ser Arg Glu Leu Glu
      515
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      530
Gln Ile Leu Gly Gln Leu Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu
      545
Leu Arg Ser Leu Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Gln
      560
Arg Ile Glu Ile Lys Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu
      575
Glu Gln Asn Lys Ser Lys Lys Lys Ala Gln Gln Ala Ala Asp Thr
      590
Gly His Ser Asn Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Ile
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Gln Gly Gln Met Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala
      620
Trp Val Lys Val Val Glu Lys Ala Phe Ser Pro Glu Val Ile Pro
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Met Phe Ser Ala Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr
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Met Leu Asn Thr Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys
      665
Glu Thr Ile Asn Glu Glu Ala Ala Glu Trp Asp Arg Val His Pro Val
      680
His Ala Gly Pro Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser
      695
Asp Ile Ala Gly Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met
      710
Thr Asn Asn Pro Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile
      725
Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile
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Leu Asp Ile Arg Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp
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      765
      770
      775
      780

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seqlist.txt

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Lys	Thr	Ile	Leu	Lys	Ala	Leu	Gly	Pro	Ala	Ala	Thr	Leu	Glu	Glu	Met
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		835					840					845			
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Thr	Tyr	Lys	Ala	Ala	Val	Asp	Leu	Ser	His	Phe	Leu	Lys	Glu	Lys	Gly
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945					950					955					960
Leu	Trp	Ile	Tyr	His	Thr	Gln	Gly	Tyr	Phe	Pro	Asp	Trp	Gln	Asn	Tyr
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Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Gln	Gly	Ser	Gln	Thr
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His	Gln	Val	Ser	Leu	Ser	Lys	Gln	Pro	Thr	Ser	Gln	Ser	Lys	Gly	Glu
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			1140												

<210> 78

<211> 3426

<212> DNA

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 mLL-Nef Tatm fusion

<400> 78

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gcgacgcatg	cttgcggtgcc	tacggacccc	aacccccagg	aggtgggtgct	gggaaacgtg	180
accgagtact	tcaacatgtg	gaagaataac	atggtggatc	agatgcacga	ggacatcatc	240
tctctgtggg	accagtcctt	gaagccctgc	gtgaagctga	cgcctctctg	cgtgacactg	300
gactgtgacg	acgtcaacac	caccaacagc	actaccacca	ccagcaacgg	ctggaccgga	360
gagattcgga	agggcgagat	caagaactgc	tccttcaata	tcacgacctc	gatcagagac	420
aaggtgcaga	aggaatacgc	gctgttttat	aatctcgatg	tgggtcccat	cgacgacgac	480
aatgccacca	ccaagaacaa	gacgacgcgt	aatttcagac	tcattcactg	caacagcagc	540
gtcatgacgc	aggcctgccc	caaggtgtcc	ttcgaaccaa	tcccgatcca	ttactgtgcc	600
cctgccggat	tcgcgatcct	caagtgtaac	aacaagacct	tcgacgggaa	gggcctgtgc	660

seqlist.txt

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aacaacaaca cccgtaaggg catccacatc ggccttgac gggccttcta tgccgcccgc 900
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<210> 79

<211> 1141

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 mLL-Nef Tatm fusion

<400> 79

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Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
35     40     45
Asp Pro Asn Pro Gln Glu Val Leu Gly Asn Val Thr Glu Tyr Phe
50     55     60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65     70     75     80
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu

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90

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                                seqlist.txt
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                               645                               655
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                               660                               670
Met Leu Asn Thr Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys
                               675                               685
Glu Thr Ile Asn Glu Glu Ala Glu Trp Asp Arg Val His Pro Val
                               690                               700
His Ala Gly Pro Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser
705                               710                               720
Asp Ile Ala Gly Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met
                               725                               735
Thr Asn Asn Pro Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile
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Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile
                               755                               765
Leu Asp Ile Arg Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp
770                               775                               780
Arg Phe Tyr Lys Thr Leu Arg Ala Glu Gln Ala Ser Gln Glu Val Lys
785                               790                               800
Asn Trp Met Thr Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys
                               805                               815
Lys Thr Ile Leu Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met
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Met Thr Ala Cys Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val
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900                               905                               910
Glu Val Gly Phe Pro Val Thr Pro Gln Val Pro Leu Arg Pro Met Thr
                               915                               925
Tyr Lys Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly Gly
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Leu Glu Gly Leu Ile His Ser Gln Arg Arg Gln Asp Ile Leu Asp Leu
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Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr Thr
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Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr Lys
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Asn Thr Ser Ala Ala His Pro Val Ser Leu His Gly Met Asp Asp Pro
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Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe His
1025                               1030                               1035
His Val Ala Arg Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr Ser
                               1040                               1045
Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gln
1060                               1065                               1070
Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe His
1075                               1080                               1085
Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly Arg
1090                               1095                               1100
Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His
1105                               1110                               1115
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1140

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seqlist.txt

<211> 3426
<212> DNA
<213> Artificial Sequence

<220>
<223> HIV-1 ds-gp120c p17/24 mL1-Nef Tatm fusion

<400> 80

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<210> 81

seqlist.txt

<211> 1141

<212> PRT

<213> Artificial sequence

<220>

<223> HIV-1 ds-gp120c p17/24 mL1-Nef Tatm fusion

<400> 81

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Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
      35      40      45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
      50      55      60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65      70      75      80
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
      85      90      95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
      100      105      110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
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      195      200      205
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210      215      220
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225      230      235      240
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Asn Phe Met Asp Asn Thr Lys Thr Ile Val Gln Leu Asn Glu Ser
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      275      280      285
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290      295      300
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305      310      315      320
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys
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His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
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Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
      370      375      380
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met
385      390      395      400
Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
      405      410      415
Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly
      420      425      430
Gly Thr Glu Gly Asn Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro
      435      440      445
Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr
450      455      460
Lys Val Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
465      470      475      480

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seqlist.txt

Arg	Arg	Val	Val	Gln	Arg	Met	Gly	Ala	Arg	Ala	Ser	Val	Leu	Ser	Gly
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Gly	Glu	Leu	Asp	Arg	Trp	Glu	Lys	Ile	Arg	Leu	Arg	Pro	Gly	Gly	Lys
			500					505					510		
Lys	Lys	Tyr	Lys	Leu	Lys	His	Ile	Val	Trp	Ala	Ser	Arg	Glu	Leu	Glu
		515					520					525			
Arg	Phe	Ala	Val	Asn	Pro	Gly	Leu	Leu	Glu	Thr	Ser	Glu	Gly	Cys	Arg
	530					535					540				
Gln	Ile	Leu	Gly	Gln	Leu	Gln	Pro	Ser	Leu	Gln	Thr	Gly	Ser	Glu	Glu
545					550					555					560
Leu	Arg	Ser	Leu	Tyr	Asn	Thr	Val	Ala	Thr	Leu	Tyr	Cys	Val	His	Gln
				565					570					575	
Arg	Ile	Glu	Ile	Lys	Asp	Thr	Lys	Glu	Ala	Leu	Asp	Lys	Ile	Glu	Glu
			580					585					590		
Glu	Gln	Asn	Lys	Ser	Lys	Lys	Lys	Ala	Gln	Gln	Ala	Ala	Ala	Asp	Thr
		595					600					605			
Gly	His	Ser	Asn	Gln	Val	Ser	Gln	Asn	Tyr	Pro	Ile	Val	Gln	Asn	Ile
	610					615					620				
Gln	Gly	Gln	Met	Val	His	Gln	Ala	Ile	Ser	Pro	Arg	Thr	Leu	Asn	Ala
625					630					635					640
Trp	Val	Lys	Val	Val	Glu	Glu	Lys	Ala	Phe	Ser	Pro	Glu	Val	Ile	Pro
				645					650					655	
Met	Phe	Ser	Ala	Leu	Ser	Glu	Gly	Ala	Thr	Pro	Gln	Asp	Leu	Asn	Thr
			660					665					670		
Met	Leu	Asn	Thr	Val	Gly	Gly	His	Gln	Ala	Ala	Met	Gln	Met	Leu	Lys
		675					680					685			
Glu	Thr	Ile	Asn	Glu	Glu	Ala	Ala	Glu	Trp	Asp	Arg	Val	His	Pro	Val
	690					695					700				
His	Ala	Gly	Pro	Ile	Ala	Pro	Gly	Gln	Met	Arg	Glu	Pro	Arg	Gly	Ser
705					710					715					720
Asp	Ile	Ala	Gly	Thr	Thr	Ser	Thr	Leu	Gln	Glu	Gln	Ile	Gly	Trp	Met
				725										735	
Thr	Asn	Asn	Pro	Pro	Ile	Pro	Val	Gly	Glu	Ile	Tyr	Lys	Arg	Trp	Ile
			740					745					750		
Ile	Leu	Gly	Leu	Asn	Lys	Ile	Val	Arg	Met	Tyr	Ser	Pro	Thr	Ser	Ile
		755					760					765			
Leu	Asp	Ile	Arg	Gln	Gly	Pro	Lys	Glu	Pro	Phe	Arg	Asp	Tyr	Val	Asp
	770					775					780				
Arg	Phe	Tyr	Lys	Thr	Leu	Arg	Ala	Glu	Gln	Ala	Ser	Gln	Glu	Val	Lys
785					790					795					800
Asn	Trp	Met	Thr	Glu	Thr	Leu	Leu	Val	Gln	Asn	Ala	Asn	Pro	Asp	Cys
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Lys	Thr	Ile	Leu	Lys	Ala	Leu	Gly	Pro	Ala	Ala	Thr	Leu	Glu	Glu	Met
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Met	Thr	Ala	Cys	Gln	Gly	Val	Gly	Gly	Pro	Gly	His	Lys	Ala	Arg	Val
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Leu	Met	Gly	Lys	Trp	Ser	Lys	Ser	Ser	Val	Val	Gly	Trp	Pro	Thr	Val
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Arg	Glu	Arg	Met	Arg	Arg	Ala	Glu	Pro	Ala	Ala	Asp	Gly	Val	Gly	Ala
865					870				875						880
Ala	Ser	Arg	Asp	Leu	Glu	Lys	His	Gly	Ala	Ile	Thr	Ser	Ser	Asn	Thr
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Ala	Ala	Thr	Asn	Ala	Ala	Cys	Ala	Trp	Leu	Glu	Ala	Gln	Glu	Glu	Glu
			900					905					910		
Glu	Val	Gly	Phe	Pro	Val	Thr	Pro	Gln	Val	Pro	Leu	Arg	Pro	Met	Thr
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Tyr	Lys	Ala	Ala	Val	Asp	Leu	Ser	His	Phe	Leu	Lys	Glu	Lys	Gly	Gly
	930					935					940				
Leu	Glu	Gly	Leu	Ile	His	Ser	Gln	Arg	Arg	Gln	Asp	Ile	Leu	Asp	Leu
945					950					955					960
Trp	Ile	Tyr	His	Thr	Gln	Gly	Tyr	Phe	Pro	Asp	Trp	Gln	Asn	Tyr	Thr
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Pro	Gly	Pro	Gly	Val	Arg	Tyr	Pro	Leu	Thr	Phe	Gly	Trp	Cys	Tyr	Lys
			980					985					990		
Leu	Val	Pro	Val	Glu	Pro	Asp	Lys	Val	Glu	Glu	Ala	Asn	Lys	Gly	Glu
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seqlist.txt

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 1045 1050 1055
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 1060 1065 1070
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 1075 1080 1085
 Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly Arg
 1090 1095 1100
 Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His
 1105 1110 1115 1120
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 1125 1130 1135
 Thr Gly Pro Lys Glu
 1140

<210> 82
 <211> 3426
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HIV-1 ds-gp120c p17/24 mL2-Nef Tatm fusion

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 gcgacgcatg cttgcgtgcc tacggacccc aacccccagg aggtgtgtgct gggaaacgtg 180
 accgagtact tcaacatgtg gaagaataac atggtggatc agatgcacga ggacatcatc 240
 tctctgtggg accagtcctt gaagccctgc gtgaagctga cgctctcttg cgtgacactg 300
 gactgtgacg acgtcaacac caccaacagc actaccacca ccagcaacgg ctggaccgga 360
 gagattcgga agggcgagat caagaactgc tccttcaata tcacgacctc gatcagagac 420
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 aatgccacca ccaagaacaa gacgacgcgt aatttcagac tcattcactg caacagcagc 540
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seqlist.txt

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<210> 83

<211> 1141

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c p17/24 mL2-Nef Tatm fusion

<400> 83

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      20          25          30
Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr
      35          40          45
Asp Pro Asn Pro Gln Glu Val Val Leu Gly Asn Val Thr Glu Tyr Phe
      50          55          60
Asn Met Trp Lys Asn Asn Met Val Asp Gln Met His Glu Asp Ile Ile
65          70          75          80
Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu
      85          90          95
Cys Val Thr Leu Asp Cys Asp Asp Val Asn Thr Thr Asn Ser Thr Thr
      100          105          110
Thr Thr Ser Asn Gly Trp Thr Gly Glu Ile Arg Lys Gly Glu Ile Lys
      115          120          125
Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln Lys
      130          135          140
Glu Tyr Ala Leu Phe Tyr Asn Leu Asp Val Val Pro Ile Asp Asp Asp
145          150          155          160
Asn Ala Thr Thr Lys Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His
      165          170          175
Cys Asn Ser Ser Val Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu
      180          185          190
Pro Ile Pro Ile His Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys
      195          200          205
Cys Asn Asn Lys Thr Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser
210          215          220
Thr Val Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu
225          230          235          240
Leu Leu Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Asp
      245          250          255
Asn Phe Met Asp Asn Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser
      260          265          270
Val Ala Ile Asn Cys Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile
      275          280          285
His Ile Gly Pro Gly Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly
290          295          300
Asp Ile Arg Gln Ala His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn
305          310          315          320
Thr Leu Lys Gln Ile Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys

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seqlist.txt

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325
Thr Ile Lys Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg
340
His Ser Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln
355
Leu Phe Asn Ser Thr Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly
370
Asn Ser Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met
385
Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln
405
Ile Arg Cys Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly
420
Gly Thr Glu Gly Asn Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro
435
Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr
450
Lys Val Val Lys Val Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys
465
Arg Arg Val Val Gln Arg Met Gly Ala Arg Ala Ser Val Leu Ser Gly
485
Gly Glu Leu Asp Arg Trp Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys
500
Lys Lys Tyr Lys Leu Lys His Ile Val Trp Ala Ser Arg Glu Leu Glu
515
Arg Phe Ala Val Asn Pro Gly Leu Leu Glu Thr Ser Glu Gly Cys Arg
530
Gln Ile Leu Gly Gln Leu Gln Pro Ser Leu Gln Thr Gly Ser Glu Glu
545
Leu Arg Ser Leu Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Gln
565
Arg Ile Glu Ile Lys Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu
580
Glu Gln Asn Lys Ser Lys Lys Lys Ala Gln Gln Ala Ala Asp Thr
595
Gly His Ser Asn Gln Val Ser Gln Asn Tyr Pro Ile Val Gln Asn Ile
610
Gln Gly Gln Met Val His Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala
625
Trp Val Lys Val Val Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro
645
Met Phe Ser Ala Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr
660
Met Leu Asn Thr Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys
675
Glu Thr Ile Asn Glu Glu Ala Glu Trp Asp Arg Val His Pro Val
690
His Ala Gly Pro Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Ser
705
Asp Ile Ala Gly Thr Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp Met
725
Thr Asn Asn Pro Pro Ile Pro Val Gly Glu Ile Tyr Lys Arg Trp Ile
740
Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr Ser Pro Thr Ser Ile
755
Leu Asp Ile Arg Gln Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp
770
Arg Phe Tyr Lys Thr Leu Arg Ala Glu Gln Ala Ser Gln Glu Val Lys
785
Asn Trp Met Thr Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys
805
Lys Thr Ile Leu Lys Ala Leu Gly Pro Ala Ala Thr Leu Glu Glu Met
820
Met Thr Ala Cys Gln Gly Val Gly Gly Pro Gly His Lys Ala Arg Val
835
Leu Met Gly Lys Trp Ser Lys Ser Ser Val Val Gly Trp Pro Thr Val
850
Arg Glu Arg Met Arg Arg Ala Glu Pro Ala Ala Asp Gly Val Gly Ala

```

seqlist.txt

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Ala Ser Arg Asp Leu Glu Lys His Gly Ala Ile Thr Ser Ser Asn Thr
885      890      900      910      915
Ala Ala Thr Asn Ala Ala Cys Ala Trp Leu Glu Ala Gln Glu Glu
905      920      925
Glu Val Gly Phe Pro Val Thr Pro Gln Val Pro Leu Arg Pro Met Thr
930      935      940
Tyr Lys Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys Gly Gly
945      950      955      960
Leu Glu Gly Leu Ile His Ser Gln Arg Arg Gln Asp Ile Leu Asp Leu
965      970      975
Trp Ile Tyr His Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr Thr
980      985      990
Pro Gly Pro Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr Lys
995      1000      1005
Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys Gly Glu
1010      1015      1020
Asn Thr Ser Leu Ala His Pro Val Ser Leu His Gly Met Asp Asp Pro
1025      1030      1035      1040
Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala Phe His
1045      1050      1055
His Val Ala Arg Glu Leu His Pro Glu Tyr Phe Lys Asn Cys Thr Ser
1060      1065      1070
Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser Gln
1075      1080      1085
Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe His
1090      1095      1100
Cys Gln Val Cys Phe Ile Thr Ala Ala Leu Gly Ile Ser Tyr Gly Arg
1105      1110      1115      1120
Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His
1125      1130      1135
Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Lys Gly Glu Pro
Thr Gly Pro Lys Glu
1140

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<210> 84

<211> 4662

<212> DNA

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c RT trNef p17/24 fusion

<400> 84

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gcgacgcatg cttgcgtgcc tacggacccc aacccccagg aggtgtgtgt gggaaacgtg 180
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seqlist.txt

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<211> 1553

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 ds-gp120c RT trNef p17/24 fusion

<400> 85

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seqlist.txt

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seqlist.txt

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seqlist.txt

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<212> DNA

<213> Artificial Sequence

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<223> HIV-1 RT trNef p17/24 ds gp120c fusion

seqlist.txt

<400> 86

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<213> Artificial sequence

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<223> HIV-1 RT trNef p17/24 ds gp120c fusion

<400> 87

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seqlist.txt

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seqlist.txt

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Asn Lys Thr Thr Arg Asn Phe Arg Leu Ile His Cys Asn Ser Ser Val
 1235 1240 1245
Met Thr Gln Ala Cys Pro Lys Val Ser Phe Glu Pro Ile Pro Ile His
 1250 1255 1260
Tyr Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys Cys Asn Asn Lys Thr
 1265 1270 1275 1280
Phe Asp Gly Lys Gly Leu Cys Thr Asn Val Ser Thr Val Gln Cys Thr
 1285 1290 1295
His Gly Ile Arg Pro Val Val Ser Thr Gln Leu Leu Leu Asn Gly Ser
 1300 1305 1310
Leu Ala Glu Glu Val Val Ile Arg Ser Asp Asn Phe Met Asp Asn
 1315 1320 1325
Thr Lys Thr Ile Ile Val Gln Leu Asn Glu Ser Val Ala Ile Asn Cys
 1330 1335 1340
Thr Arg Pro Asn Asn Asn Thr Arg Lys Gly Ile His Ile Gly Pro Gly
 1345 1350 1355 1360
Arg Ala Phe Tyr Ala Ala Arg Lys Ile Ile Gly Asp Ile Arg Gln Ala
 1365 1370 1375
His Cys Asn Leu Ser Arg Ala Gln Trp Asn Asn Thr Leu Lys Gln Ile
 1380 1385 1390
Val Ile Lys Leu Arg Glu His Phe Gly Asn Lys Thr Ile Lys Phe Asn
 1395 1400 1405
Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Arg His Ser Phe Asn Cys
 1410 1415 1420
Gly Gly Glu Phe Phe Tyr Cys Asp Thr Thr Gln Leu Phe Asn Ser Thr
 1425 1430 1435 1440
Trp Asn Gly Thr Glu Gly Asn Asn Thr Glu Gly Asn Ser Thr Ile Thr
 1445 1450 1455
Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Met Trp Gln Glu Val Gly

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1460      1465      1470
Lys Ala Met Tyr Ala Pro Pro Ile Gly Gly Gln Ile Arg Cys Ser Ser
1475      1480      1485
Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp Gly Gly Thr Glu Gly Asn
1490      1495      1500
Gly Thr Glu Asn Glu Thr Glu Ile Phe Arg Pro Gly Gly Gly Asp Met
1505      1510      1515      1520
Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys Val
1525      1530      1535
Glu Pro Leu Gly Val Ala Pro Thr Arg Ala Lys Arg Arg Val Val Gln
1540      1545      1550
Arg

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<210> 88
 <211> 3204
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> HIV-1 RT trNef p17/24 fusion

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<400> 88
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accgagatgg agaaaagagg caagatcagc aagatcgggc ctgagaaccc atacaacacc 180
cccgtgtttg ccatcaagaa gaaggacagc accaagtggc gcaagctggt ggatttcccg 240
gagctgaata agcggaccca ggatttctgg gaggtccagc tgggcatccc ccatccggcc 300
ggcctgaaga agaagaagag cgtgaccgtg ctggacgtgg gcgacgctta cttcagcgctc 360
cctctggacg aggactttag aaagtacacc gcctttacca tcccatctat caacaacgag 420
accctggca tcagatatca gtacaacgtc ctccccagg gctggaaggg ctctcccgcc 480
attttccaga gctccatgac caagatcctg gagccgtttc ggaagcagaa ccccgatata 540
gtcatctacc agtacatgga cgacctgtac gtgggctctg acctggaat cgggcagcat 600
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caggcagctg ctgacactgg gcatagcaac caggtatcac agaactatcc tattgtccaa 2520
aacattcagg gccagatggg tcatcaggcc atcagcccc ggacgctcaa tgcctgggtg 2580
aaggttgtcg aagagaaggc cttttctcct gaggttatcc ccattgtctc cgctttgagt 2640

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seqlist.txt

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cccgtccacg ctggcccaat cgcgcccgga cagatgcggg agcctcgcgg ctctgacatt 2820
gccggcacca cctctacact gcaagagcaa atcggatgga tgaccaacaa tcctcccatc 2880
ccagttggag aaatctataa acggtggatc atcctgggccc tgaacaagat cgtgcgcacg 2940
tactctccga catccatcct tgacattaga cagggaccca aagagccttt tagggattac 3000
gtcgaccggt tttataagac cctgcgagca gagcaggcct ctcaggagggt caaaaactgg 3060
atgacggaga cactcctggt acagaacgct aaccccgact gcaaaacaat cttgaaggca 3120
ctaggcccg ctgccaccct ggaagagatg atgaccgcct gtcagggagt aggcggacc 3180
ggacacaaag ccagagtgtt gtaa 3204

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<210> 89

<211> 1067

<212> PRT

<213> Artificial Sequence

<220>

<223> HIV-1 RT trNef p17/24 fusion

<400> 89

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Met Gly Pro Ile Ser Pro Ile Glu Thr Val Pro Val Lys Leu Lys Pro
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Gly Met Asp Gly Pro Lys Val Lys Gln Trp Pro Leu Thr Glu Gly Lys
20     25     30
Ile Lys Ala Leu Val Glu Ile Cys Thr Glu Met Glu Lys Gly Lys
35     40     45
Ile Ser Lys Ile Gly Pro Glu Asn Pro Tyr Asn Thr Pro Val Phe Ala
50     55     60
Ile Lys Lys Lys Asp Ser Thr Lys Trp Arg Lys Leu Val Asp Phe Arg
65     70     75     80
Glu Leu Asn Lys Arg Thr Gln Asp Phe Trp Glu Val Gln Leu Gly Ile
85     90     95
Pro His Pro Ala Gly Leu Lys Lys Lys Lys Ser Val Thr Val Leu Asp
100    105    110
Val Gly Asp Ala Tyr Phe Ser Val Pro Leu Asp Glu Asp Phe Arg Lys
115    120    125
Tyr Thr Ala Phe Thr Ile Pro Ser Ile Asn Asn Glu Thr Pro Gly Ile
130    135    140
Arg Tyr Gln Tyr Asn Val Leu Pro Gln Gly Trp Lys Gly Ser Pro Ala
145    150    155    160
Ile Phe Gln Ser Ser Met Thr Lys Ile Leu Glu Pro Phe Arg Lys Gln
165    170    175
Asn Pro Asp Ile Val Ile Tyr Gln Tyr Met Asp Asp Leu Tyr Val Gly
180    185    190
Ser Asp Leu Glu Ile Gly Gln His Arg Thr Lys Ile Glu Leu Arg
195    200    205
Gln His Leu Leu Arg Trp Gly Leu Thr Thr Pro Asp Lys Lys His Gln
210    215    220
Lys Glu Pro Pro Phe Leu Lys Met Gly Tyr Glu Leu His Pro Asp Lys
225    230    235    240
Trp Thr Val Gln Pro Ile Val Leu Pro Glu Lys Asp Ser Trp Thr Val
245    250    255
Asn Asp Ile Gln Lys Leu Val Gly Lys Leu Asn Trp Ala Ser Gln Ile
260    265    270
Tyr Pro Gly Ile Lys Val Arg Gln Leu Cys Lys Leu Leu Arg Gly Thr
275    280    285
Lys Ala Leu Thr Glu Val Ile Pro Leu Thr Glu Glu Ala Glu Leu Glu
290    295    300
Leu Ala Glu Asn Arg Glu Ile Leu Lys Glu Pro Val His Gly Val Tyr
305    310    315    320
Tyr Asp Pro Ser Lys Asp Leu Ile Ala Glu Ile Gln Lys Gln Gly Gln
325    330    335
Gly Gln Trp Thr Tyr Gln Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys
340    345    350
Thr Gly Lys Tyr Ala Arg Met Arg Gly Ala His Thr Asn Asp Val Lys
355    360    365
Gln Leu Thr Glu Ala Val Gln Lys Ile Thr Thr Glu Ser Ile Val Ile
370    375    380

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seqlist.txt

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Trp Gly Lys Thr Pro Lys Phe Lys Leu Pro Ile Gln Lys Glu Thr Trp
385      390      395      400
Glu Thr Trp Trp Thr 405 Glu Tyr Trp Gln Ala Thr Trp Ile Pro Glu Trp
      410      415
Glu Phe Val Asn Thr Pro Pro Leu Val Lys Leu Trp Tyr Gln Leu Glu
      420      425      430
Lys Glu Pro 435 Ile Val Gly Ala Glu Thr Phe Tyr Val Asp Gly Ala Ala
      440      445
Asn Arg Glu Thr Lys Leu Gly 455 Lys Ala Gly Tyr Val Thr Asn Arg Gly
      450      460
Arg Gln Lys Val Val Thr 470 Leu Thr Asp Thr Thr Asn Gln Lys Thr Glu
      465      475      480
Leu Gln Ala Ile Tyr 485 Leu Ala Leu Gln Asp Ser Gly Leu Glu Val Asn
      490      495
Ile Val Thr Asp Ser Gln Tyr Ala Leu Gly Ile Ile Gln Ala Gln Pro
      500      505      510
Asp Gln Ser 515 Glu Ser Glu Leu Val Asn Gln Ile Ile Glu Gln Leu Ile
      520      525
Lys Lys Glu Lys Val Tyr Leu Ala Trp Val Pro Ala His Lys Gly Ile
      530      535      540
Gly Gly Asn Glu Gln Val 550 Asp Lys Leu Val Ser Ala Gly Ile Arg Lys
      545      555      560
Val Leu Met Val Gly 565 Phe Pro Val Thr Pro Gln Val Pro Leu Arg Pro
      570      575
Met Thr Tyr Lys Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys
      580      585      590
Gly Gly Leu Glu Gly Leu Ile His 600 Ser Gln Arg Arg Gln Asp Ile Leu
      595      605
Asp Leu Trp Ile Tyr His Thr 615 Gln Gly Tyr Phe Pro Asp Trp Gln Asn
      620      625
Tyr Thr Pro Gly Pro Gly 630 Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys
      635      640
Tyr Lys Leu Val Pro Val Glu Pro Asp Lys Val Glu Glu Ala Asn Lys
      645      650      655
Gly Glu Asn Thr 660 Ser Leu Leu His Pro Val Ser Leu His Gly Met Asp
      665      670
Asp Pro Glu Arg Glu Val Leu Glu Trp Arg Phe Asp Ser Arg Leu Ala
      675      680      685
Phe His His Val Ala Arg Glu 695 Leu His Pro Glu Tyr Phe Lys Asn Cys
      700
Met Gly Ala Arg Ala Ser 710 Val Leu Ser Gly Gly Glu Leu Asp Arg Trp
      705      715      720
Glu Lys Ile Arg Leu Arg Pro Gly Gly Lys Lys Lys Tyr Lys Leu Lys
      725      730      735
His Ile Val Trp Ala Ser Arg Glu Leu 745 Glu Arg Phe Ala Val Asn Pro
      740      750
Gly Leu Leu Glu Thr Ser Glu Gly 760 Cys Arg Gln Ile Leu Gly Gln Leu
      755      765
Gln Pro Ser Leu Gln Thr Gly 775 Ser Glu Glu Leu Arg Ser Leu Tyr Asn
      770      780
Thr Val Ala Thr Leu Tyr Cys Val His Gln Arg Ile Glu Ile Lys Asp
      785      790      800
Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu Glu Gln Asn Lys Ser Lys
      805      810      815
Lys Lys Ala Gln Gln Ala Ala Ala Asp 825 Thr Gly His Ser Asn Gln Val
      820      830
Ser Gln Asn Tyr Pro Ile Val Gln Asn Ile Gln Gly Gln Met Val His
      835      840      845
Gln Ala Ile Ser Pro Arg Thr 855 Leu Asn Ala Trp Val Lys Val Val Glu
      850      860
Glu Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe Ser Ala Leu Ser
      865      870      875      880
Glu Gly Ala Thr 885 Gln Asp Leu Asn Thr Met Leu Asn Thr Val Gly
      890      895
Gly His Gln Ala Ala Met Gln Met Leu Lys Glu Thr Ile Asn Glu Glu
      900      910
Ala Ala Glu Trp Asp Arg Val His 920 Pro Val His Ala Gly Pro Ile Ala
      915      925

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seqlist.txt

Pro	Gly	Gln	Met	Arg	Glu	Pro	Arg	Gly	Ser	Asp	Ile	Ala	Gly	Thr	Thr
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Ser	Thr	Leu	Gln	Glu	Gln	Ile	Gly	Trp	Met	Thr	Asn	Asn	Pro	Pro	Ile
945					950					955					960
Pro	Val	Gly	Glu	Ile	Tyr	Lys	Arg	Trp	Ile	Ile	Leu	Gly	Leu	Asn	Lys
			965						970					975	
Ile	Val	Arg	Met	Tyr	Ser	Pro	Thr	Ser	Ile	Leu	Asp	Ile	Arg	Gln	Gly
			980					985					990		
Pro	Lys	Glu	Pro	Phe	Arg	Asp	Tyr	Val	Asp	Arg	Phe	Tyr	Lys	Thr	Leu
		995					1000					1005			
Arg	Ala	Glu	Gln	Ala	Ser	Gln	Glu	Val	Lys	Asn	Trp	Met	Thr	Glu	Thr
	1010					1015					1020				
Leu	Leu	Val	Gln	Asn	Ala	Asn	Pro	Asp	Cys	Lys	Thr	Ile	Leu	Lys	Ala
1025					1030					1035					1040
Leu	Gly	Pro	Ala	Ala	Thr	Leu	Glu	Glu	Met	Met	Thr	Ala	Cys	Gln	Gly
			1045						1050					1055	
Val	Gly	Gly	Pro	Gly	His	Lys	Ala	Arg	Val	Leu					
			1060					1065							